NOTES AND BRIEF ARTICLES

[Unsigned notes are by the editor]

Readers of MYCOLOGIA are invited to contribute to this department personal news items and notes or brief articles of interest to mycologists in general. Manuscript should be submitted before the middle of the month preceding the month in which this publication is issued.

Dr. G. R. Bisby, formerly of the University of Minnesota, has removed to Winnipeg, Canada, where he is professor of plant pathology at the Manitoba Agricultural College.

Mr. Paul A. Murphy, so well known for his work on potato diseases, is now located in the Division of Seeds and Plant Diseases, Royal College of Science, Dublin, Ireland.

Dr. W. A. Murrill lectured at Manchester, Vermont, July 8; examined types of *Poria* at Albany, July 9; and lectured again at Yama Farms, July 10. He is much indebted to Dr. House for assisting him in getting at the type specimens of *Poria*.

Mr. Freeman Weiss, formerly under the employ of the Department of Agriculture and the Minnesota Agricultural Experiment Station, investigating cereal diseases, has been appointed assistant pathologist in the Department of Agriculture and is engaged in investigating the potato-wart disease.

Mr. N. Rex Hunt has been transferred from the Office of Forest Pathology Investigations, Bureau of Plant Industry, to the Federal Horticultural Board to assist in the eradication of the potato-wart disease.

Dr. Charles Drechsler has taken up the investigation of vegetable decays and decay-producing organisms as an employee of

the Office of Cotton, Truck, and Forage Crop Disease Investigations, with headquarters at Brooklyn, New York.

Mr. D. C. Neal has accepted the position of plant pathologist for the Mississippi Agricultural Experiment Station, after resigning a similar position with the Georgia State Board of Entomology.

Mr. C. M. Tucker, recently graduated from the University of Missouri, has accepted a position with the Extension Division of the Florida College of Agriculture and will conduct extension work on the control of watermelon diseases.

Dr. F. Kølpin Ravn, of Denmark, died suddenly of blood poisoning, on May 25, at the home of his wife's parents at East Orange, New Jersey.

Mr. Julius Matz, who for the past year held the position of assistant pathologist at the Insular Experiment Station at Rio Piedras, Porto Rico, has been appointed chief of the Division of Botany and Plant Pathology at the same station.

Tagging instead of blazing trees is strongly recommended by Weir in *Phytopathology* for July, 1920,—with evidence to support his opinion.

Serious injury to Rhododendrons and Azaleas in the Northwest by *Armillaria mellea* was noted by Schmitz in the July number of *Phytopathology*.

On a recent visit to Albany, typical specimens of *Poria ornata* Peck and *Poria subacida* Peck were compared and the species found to be identical.

A list of ascomycetes new to Indiana, by Bruce Fink and Sylvia Fuson, appeared in the *Proceedings of the Indiana Acad-*

emy of Science for 1918, pp. 264–275. It contains about 140 species, including 2 new ones, *Pyrenopsis fuscoatra* Fink and *Verrucaria sordida* Fink.

Rusts on conifers in Pennsylvania are described and figured by J. F. Adams in Bulletin 160 of the Pennsylvania Agricultural Experiment Station, which also contains an important paper by the same author on sexual fusions and the development of the sexual organs in the Peridermiums.

Mrs. John R. Delafield sent in many interesting specimens of fungi from the vicinity of Buck Hill Falls, Pennsylvania, during her residence there the past summer and autumn. Many of them were accompanied by beautiful colored figures, as well as by valuable field notes.

Reddening of the leaves of *Rhus copallina* in New England has been ascribed to the action of *Exoascus purpurascens*. In Italy, Traverso has investigated two diseases of *Rhus coriaria*; one causing leaf coloration and die-back, ascribed to *E. purpurascens*, and the other appearing in minute, discolored spots caused by *Septoria rhoina*.

Experiments on the control of eelworms in Narcissus growing out-of-doors were reported a year ago by J. K. Ramsbottom in the *Journal of the Royal Horticultural Society*. Experiments with manures and chemical sterilizers were alike ineffective in freeing soils from nematode infection or in protecting crops from nematode attack. Experimentation on different crops with a view to securing a rotation that would avoid or minimize nematode attack showed that this organism may become so adapted to a particular host species as not to attack with severity other host species.

In a bulletin published in 1919 by the Trinidad Department of Agriculture, J. B. Rorer discusses the fungous diseases of the avocado, or alligator pear. He states that the only serious dis-

ease found on the fruit is the so-called anthracnose, which is identical with or closely related to the anthracnose of mango. Avocado die-back is of frequent occurrence throughout the Colony. This is due to *Diplodia cacaoicola,* which also causes die-back of cacao and of rubber. It is thought to enter by way of very young tissues through wounds made by the anthracnose fungus, growing then rapidly down the tree and killing back the shoots for a distance of two or three feet from the tip. The same fungus also attacks budded avocados.

Phomopsis juniperovora, a new species causing blight of nursery cedars, is described and figured by G. G. Hahn in *Phytopathology* for April, 1920. The disease is known in New York, Pennsylvania, and several states of the middle West.

Observations on some common and important diseases of the rhododendron on the Pacific Coast, by Henry Schmitz, appeared in *Phytopathology* for May, 1920. *Sporocybe Azaleae* attacks the buds and causes them to rot, while *Melampsoropsis Piperiana* attacks the leaves, producing the so-called "rust." Other fungi attacking the leaves are: *Lophodermium Rhododendri, Cocomyces dentatus, Coryneum Rhododendri, Sphaerella Rhododendri, Pestalozzia Guepini,* and *Cryptostictis* sp.

A note on our native barberry in connection with wheat rust, contributed by Stakman and Krakover to the May number of *Phtopathology,* mentions infected bushes found near Blacksburg, Virginia, May 18, 1919, by Fromme and Massey. It might be of interest to say here that in 1897 I made an extended survey of the distribution of *Berberis canadensis* about Blacksburg and found much of it infected with rust. Also, that the most badly rusted wheat I ever saw was found growing about limestone and shaly knolls covered with barberry bushes. Quantities of this material in various stages was taken by me to Cornell in the fall of 1897 and used there year after year in class demonstration and laboratory work.

An interesting article on the Phyllosticta blight of snapdragon, by Miss Edwina M. Smiley, appeared in *Phytopathology* for April, 1920. Little has been done as yet on the control of this disease, but the author advises the following precautionary measures. First, the removal of all debris from infested benches before new plants are put in and the use of only healthy plants for setting. The second precaution is the practice of soil watering, with proper ventilation of the house. Finally, snapdragons should be grown in cool houses, for the plants will do well in an average temperature of 15° C., a temperature at which the fungus can not thrive as a parasite.

A drain-blocking fungus was noted by A. Lorrain Smith in the *Transactions of the British Mycological Society* for April, 1920. In September, 1919, about fifty pounds of fungous material were taken from a sewer-pipe in London, thirty feet below the surface of the ground, and determined by Mr. Rea as *Fomes ulmarius*, which grows on elm trees. Since elm roots, like those of poplars and willows, often travel long distances in search of water, it is probable that the Fomes was connected in some way with elm roots or their remains in the pipe or adjacent soil. The fungous material was found in four different places and was removed at great cost.

Professor F. S. Earle spent several days at the Garden the past summer consulting the library in connection with his work on sugar-cane diseases in Porto Rico. Speaking of the mosaic, he said that he had proved by careful experiments that this very serious disease can be controlled by using only healthy seed and eradicating all infected plants as soon as they appear in the field. Something immensely interesting regarding the nature of this mosaic was also disclosed, which will soon appear in print. Referring to root-rot of sugar-cane, he said that all that had been written about *Marasmius Sacchari* in this connection was pure fiction, because it had nothing to do with the rot.

Crown gall has been recently investigated by Levin and M. Levine with a view to determining its analogy to animal cancer. Some of the plant tumors studied grew slowly and were not injurious, while others were malignant, and the appearance of highly differentiated tissues subsequent to and participating in the development of a malignant tumor is, it is claimed, unknown in animal cancer. The conclusion arrived at is that a fast-developing simple crown gall presents much analogy to animal cancer and offers ideal material for the cellular study thereof. The structure of the growing central part is identical in practically all crown galls thus far investigated. This structure, therefore, represents only one type among the large number of pathological processes grouped under the name of cancer. The study of crown gall, however, affords no secure ground for a claim that all human cancers are formed through the activity of an identical organism.

The following fungi were collected by W. A. Murrill on July 22, 1920, at Mountain Lake, Virginia, about 4,000 feet above sea-level: *Cordyceps militaris; Exobasidium Azaleae; Lachnocladium Schweinitzii; Laccaria laccata; Omphalopsis campanella; Gymnopus platyphyllus; Russula foetentula, R. foetens, R. furcata, R. flava,* and several other species; *Chanterel Chantarellus, C. infundibuliformis, C. minor; Vaginata plumbea* in several varieties; *Venenarius Frostianus; Crucibulum vulgare; Lycoperdon cruciatum; Ceriomyces communis; Fuscoporia ferruginosa* on dead chestnut; *Coriolus abietinus* on hemlock; *Inonotus radiatus* on birch; *Ganoderma Tsugae; Elfvingia megaloma; Elfvingiella fomentaria;* and *Pyropolyporus igniarius* in black, aborted forms on trunks of *Betula alleghaniensis,* as it occurs in Maine on *Betula lutea.*

Two papers on mushrooms by L. C. C. Krieger have recently been published under the auspices of Dr. Howard A. Kelly, of Baltimore, Maryland. One was a beautifully illustrated article in the May number of the *National Geographic Magazine* on the "Common Mushrooms of the United States," which has already

been very widely distributed; and the other a small pocket key to the genera of the gill mushrooms published as a chart, which is folded and bound for use in the field. The characters of the genera are shown for the most part by small pen sketches of typical species, and there is a brief illustrated glossary of terms relating to structure. This key may be obtained from The Norman, Remington Company, of Baltimore, for one dollar. The great advantage of any chart over a book is the opportunity it gives to compare a specimen at a single glance with every figure on it.

Notes on the Lower Basidiomycetes of North Carolina, by W. C. Coker, appeared in the Journal of the *Elisha Mitchell Scientific Society* for June, 1920. This is a continuation of the handsomely illustrated articles on North Carolina fungi which have been appearing for some time in the above-mentioned journal, and it contains descriptions and figures of many species in a number of different genera, such as *Gymnosporangium, Septobasidium, Exidia, Tremella, Tremellodendron, Sebacina, Dacrymyces,* and *Calocera.* The following species are described as new: *Ditiola Albizziae, Dacryopsis ceracea, Dacrymyces fuscominus, D. pallidus, D. Ellisii, Tremella subanomala, T. carneoalba, T. aspera, Naematelia quercina, Exidia Beardsleei, Platygloea caroliniana,* and *P. Lagerstroemiae.*

"A Critical Study of the Slime-molds of Ontario," by Mary E. Currie, appears in the *Transactions of the Royal Canadian Institute of Toronto* for 1919. The paper gives interesting descriptive and distributional notes of 118 species and varieties, in 29 genera; 47 species and varieties being recorded from Ontario for the first time, 36 being new to Canada, and 5 new to North America. The following were noted as parasites on fungi: *Badhamia foliicola* Lister, *B. magna* Peck, *B. utricularis* Berk., *Physarum flavicomum* Berk., and *P. polycephalum* Schw. The following nine were found at times fruiting on the leaves or stems of grasses or herbaceous plants, and in some cases at least are injurious to these plants: *Diachaea leucopoda* Rost., *Diderma*

effusum Morg., *D. testaceum* Pers., *Didymium squamulosum* Fries, *Fuligo septica* Gmel., *Leocarpus fragilis* Rost., *Mucilago spongiosa* Morg., *Physarum cinereum* Pers., and *P. sinuosum* Weinm.

The insect transmission of diseases is treated at length in an article of the greatest importance by F. V. Rand and W. D. Pierce in *Phytopathology* for April, 1920. According to the authors, the investigations of the past three decades have completely revolutionized our view of the rôle of insect transmission in both plant and animal diseases. Among the points to be studied are the following. It is necessary to determine on or in what part or parts of the body the contagium is carried; whether the transmission is mechanical or biological; how soon after taking up an infective principle transmission is possible; how long the insect remains infective; whether an infected larva may retain the contagium through its metamorphosis; whether the contagium can be transmitted to the offspring, and if so, for how many generations; whether the offspring can transmit the disease at any stage of its development; whether an infected insect remains infective after a period of feeding on non-susceptible hosts; and whether the contagium winters over in the insect. The mere fact, however, that the contagium of a disease is found in or on the body of an insect should in no case be taken as final proof of an insect relation to transmission. In many diseases an inoculating needle, a piece of wood, or *anything* which happens to come into contact with the diseased tissues will carry upon it some of the contagium. *The final criterion, then, should be the actual transmission of the disease under controlled conditions simulating as nearly as possible those found in nature.*

Artificial and insect transmission of sugar-cane mosaic is discussed by E. W. Brandes in a reprint from the *Journal of Agricultural Research* issued May 1, 1920. It is considered by the author as proved that the cell sap of diseased plants is infectious when introduced in the proper manner and that the disease can be transmitted by insects. Just what insects are responsible for

dissemination in the cane regions remains to be proved. The failure of the sharp-headed grain leaf-hopper to transmit the disease under the conditions of these experiments is surprising. This insect is very common on cane in Louisiana, and as a result of field observations suspicion was directed toward it from the first. Other leaf-hoppers are now being tested. The successful experiments with the corn aphis are of great interest scientifically, but it is believed that transmission of mosaic is restricted to this insect or to other aphids more abundant on cane. *Aphis maidis,* however, has been reported on sugar cane from practically every sugar-cane region in the world. That cane mosaic is analogous with other mosaic diseases is brought out by a number of facts, aside from the visible signs of the disease. As in many other mosaics, the infectious material does not seem to be highly specialized, but may attack other plants of the same family. The cell sap of infected plants contains some organism, not visible by ordinary means, which is capable of inducing the disease when injected into healthy plants. Leaves which are mature at the time of inoculation never show any signs of mosaic. This fact, typical of all mosaics, has been brought out in all inoculation experiments with sugar-cane. The disease can be transmitted by certain sucking insects. There is no known period of saprogenesis in the existence of the virus. Seed transmission of the virus is one of the phenomena concerning which divergent results have been recorded for the various mosaic diseases. This point has not been definitely settled for sugar-cane mosaic, but mosaic sorghum plants failed to produce mosaic progeny in two experiments.